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Docket No. F-8705

Ser. No. 10/538,588

AMENDMENTS TO THE CLAIMS:

Please replace the claims with the claims provided in the listing below wherein status, amendments, additions and cancellations are indicated.

1. (Currently Amended) An input multiplexer (IMUX) for splitting a broad frequency band into a series of narrower frequency channels comprising:

bandpass filters each having a center frequency arranged one per frequency channel, each of said bandpass filters having an input and an output, and an order of more than 6; and

a low loss manifold formed of sections of transmission lines each of a predetermined length and respectively connected to the input of one of said bandpass filters.

2. (Previously Presented) The input multiplexer of claim 1, wherein the manifold connects the bandpass filters such that said center frequencies are arranged non-contiguously.

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3. (Previously Presented) The input multiplexer of claim 1, wherein the manifold connects the bandpass filters such that said center frequencies are arranged contiguously.

4. (Previously Presented) The input multiplexer of one of claims 1-3, wherein the bandpass filter and the manifold are constructed in the waveguide technique, the coaxial technique, the dielectric technique and/or the planar technique.

5. (Previously Presented) The input multiplexer of one of claims 1-3, wherein a geometry of the low loss manifold is a combline or herringbone.

6. (Previously Presented) The input multiplexer of one of claims 1-3, wherein the bandpass filters are resonators in a single mode, dual mode, triple mode and/or in quadruple mode operational configuration.

7. (Previously Presented) The input multiplexer of one of claims 1-3, wherein the filters, with respect to their center frequency, are connected in any sequence with the manifold.

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8. (Previously Presented) The input multiplexer of one of claims 1-3, further comprising devices for equalizing the bandpass filters and/or the manifold.

9. (Previously Presented) A multiplex including two or more of the input multiplexer of one of claims 1-3, wherein the two or more of the input multiplexer are connected through hybrid couplers and/or power splitters.

10. (Previously Presented) The multiplexer of one of claims 1-3, wherein the overall arrangement of the multiplexer covers all channels of an IMUX.

11. (Canceled)

12. (Currently Amended) The input multiplexer of [[claims]] claim 1 wherein the bandpass filters each have a transmission function with zeros on the imaginary frequency axis in a vicinity of the passband so as to provide selectivity and a low variation in group delay within the pass band.

13. (Currently Amended) The input multiplexer of [[claims]] claim 12 wherein the transmission functions further have zeros with a finite real part.

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14. (Currently Amended) The input multiplexer of [[claims]] claim 1 wherein the bandpass filters each have a transmission function with zeros with a finite real part.

15. (New) The input multiplexer of claim 1 wherein the bandpass filters each have:

a transmission function with zeros on the imaginary frequency axis in a vicinity of the passband so as to provide selectivity; and

the transmission function includes further transmission zeros each having with a finite real part such that group delay in the passband is reduced by including said further transmission zeros from a group delay resulting from a configuration absent said further transmission zeros.

16. (New) The input multiplexer of claim 1 wherein the bandpass filters each have:

a transmission function with zeros on the imaginary frequency axis in a vicinity of the passband so as to provide selectivity; and

an external group delay equalizer coupled thereto and configured such that group delay in the passband is reduced by including said external group delay

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equalizer from a group delay resulting from a configuration absent said further transmission zeros.

17. (New) An input multiplexer (IMUX) for splitting a broad frequency band into a series of narrower frequency channels comprising:

bandpass filters including a bandpass filter for each frequency channel, each of said bandpass filters having an input and an output, and a number of resonating circuits of more than 6;

each of said bandpass filters having transmission function with zeros on the imaginary frequency axis in a vicinity of the passband so as to provide selectivity thereby providing steep skirts, and a low variation of group delay produced by further transmission zeros with a finite real part; and

a low loss manifold formed of sections of transmission lines each of a predetermined length and respectively connected to the input of one of said bandpass filters.

18. (New) The input multiplexer (IMUX) of claim 17 further comprising external group delay equalizers wherein one of said external equalizers is provided

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for each of said bandpass filters to provide the low variation of group delay in combination with said further transmission zeros.

19. (New) An input multiplexer (IMUX) for splitting a broad frequency band into a series of narrower frequency channels comprising:

bandpass filters including a bandpass filter for each frequency channel, each of said bandpass filters having an input and an output, and a number of resonating circuits of more than 6;

each of said bandpass filters having transmission function with zeros on the imaginary frequency axis in a vicinity of a passband of said bandpass filter positioned so as to provide selectivity thereby providing steep skirts;

each of said bandpass filters having an external group delay equalizer coupled thereto configured to produce a low variation of group delay; and

a low loss manifold formed of sections of transmission lines each of a predetermined length and respectively connected to the input of one of said bandpass filters.